Catalyst 6500 Series Supervisor Engine Flash PC Card Installation Note

Product Numbers:
MEM-C6K-FLC16M(=)
MEM-C6K-FLC24M(=)
MEM-C6K-FLC64M(=)
MEM-C6K-ATA-1-64M(=)

This installation note contains the procedure to install a Flash PC card in the Catalyst 6500 series supervisor engines.

Note The 64-MB ATA Flash PC card (MEM-C6K-ATA-1-64M=) requires Supervisor Engine 2 with ROMMON software release 7.1(1) or later releases. For ROMMON software upgrade details, refer to http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/relnotes/78_13488.htm.

The ATA Flash PC card is supported on Catalyst 6500 series switches running Cisco IOS Release 12.1(8a)EX or later releases on both the supervisor engine and the Multilayer Switch Feature Card (MSFC).

The ATA Flash PC card is supported on Catalyst 6500 series switches running Catalyst software release 7.5(1) or later releases on the supervisor engine and Cisco IOS on the MSFC.

Note The 64-MB linear Flash PC card (MEM-C6K-FLC64M=) is supported only on Supervisor Engine 1 and requires ROMMON software release 5.3(1) or later releases.

The 64-MB linear Flash PC card is supported on Catalyst 6500 series switches running Cisco IOS Release 12.1(13)E4 or later releases on both the supervisor engine and the MSFC.

The 64-MB linear Flash PC card is supported on Catalyst 6500 series switches running Catalyst software release 7.5(1) or later releases on the supervisor engine and Cisco IOS software on the MSFC.

CISCO SYSTEMS

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Supervisor Engine Flash PC Cards

The supervisor engine Flash PC cards conform with the PCMCIA format. These models are available:

- 16-MB MEM-C6K-FLC16M(=)
- 24-MB MEM-C6K-FLC24M(=)
- 64-MB MEM-C6K-FLC64M(=)
- MEM-C6K-ATA-1-64M=

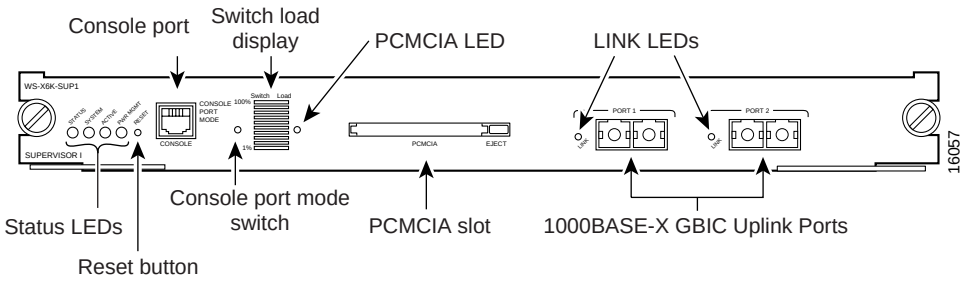
Note The 16-MB MEM-C6K-FLC16M(=) and 24-MB MEM-C6K-FLC24M(=) linear Flash PC cards are formatted for the Catalyst 6500 series supervisor engines and are ready to use.

The MEM-C6K-ATA-1-64M= and 64-MB MEM-C6K-FLC64M(=) Flash PC cards *are not* formatted. You must format these cards (see on page 7 for a description of the **format** command). When you enter the **dir disk0:** or **dir slot0:** commands, an unformatted Flash PC card returns a “bad device block info” or “invalid magic number” error message.

Note Supervisor Engine 1 and Supervisor Engine 2 do not support the same Flash PC card format. To use a Flash PC card with Supervisor Engine 2, you must format the card with Supervisor Engine 2. To use a Flash PC card with Supervisor Engine 1, you must format the card with Supervisor Engine 1.

You can use Flash PC cards to store and boot software images or they can be used as servers to store software images for other systems. You can configure each supervisor engine with one Flash PC card in slot 0. Figure 1 shows the front panel of a supervisor engine with the single PCMCIA slot, slot 0.

Figure 1 Supervisor Engine Flash PC Card Slot



For information on using the PCMCIA Flash PC cards, see the "Using Flash PC Cards" section on page 6.

Preventing Electrostatic Discharge Damage

Follow these guidelines to prevent electrostatic discharge (ESD) damage:

- Always use an ESD wrist or ankle strap and ensure that it makes good skin contact.
- Connect the equipment end of the strap to the ESD connector on the switch.
- Place a removed Flash PC card on an antistatic surface or in a static shielding bag. If the card will be returned to the factory, immediately place it in a static shielding bag.
- Avoid contact between the card and clothing. The wrist strap only protects the card from ESD voltages on the body; ESD voltages on clothing can still cause damage.

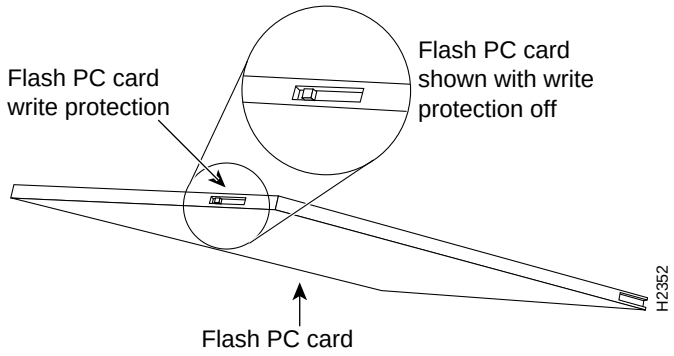
Caution For safety, periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 megohms.

Installing and Removing a Flash PC Card

Before you install a Flash PC card, verify that the card's write-protect switch is off. When the card is oriented with the printing side up and the edge connector end away from you, the write-protect switch is located on the front edge of the card, as shown in Figure 2.

Note Not all Flash PC cards have the write-protect switch.

Figure 2 Locating the Flash PC Card Write Protection Switch



To install and remove a Flash PC card (see Figure 3), perform these steps:

Note You can insert and remove the Flash PC card with the power on.

Step 1 Connect an ESD-preventive strap to the ESD connector on the switch.

Step 2 Face the front panel of the switch and hold the Flash PC card with the connector end toward the slot, as shown in Figure 3a.

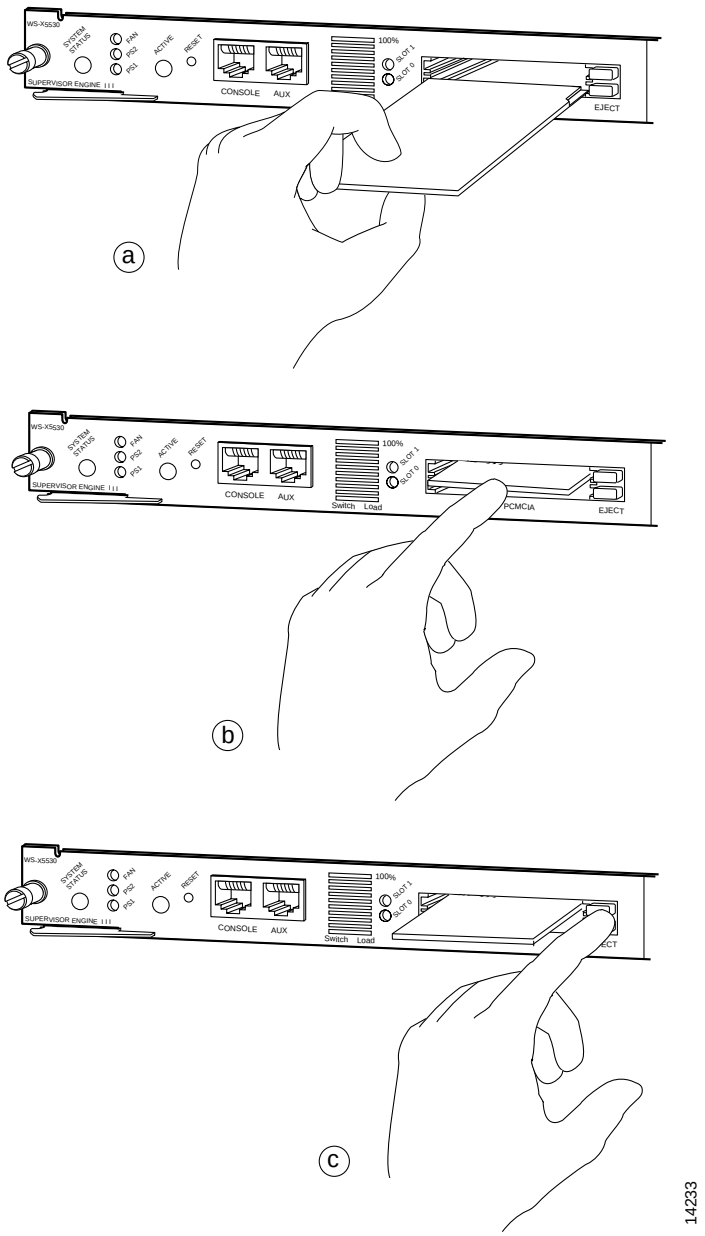
Step 3 Insert the card into the slot until it completely seats in the connector at the back of the slot and the eject button pops out toward you, as shown in Figure 3b.

Note The card does not insert all the way inside the slot; a portion of the card remains outside the slot. *Do not attempt to force the card past this point.*

Step 4 To eject a Flash PC card, press the ejector button until the card is free of the connector at the back of the slot, as shown in Figure 3c.

Step 5 Remove the card from the slot and place it in an antistatic bag.

Figure 3 Installing and Removing a Flash PC Card



Using Flash PC Cards

Note An MS-DOS formatted ATA Flash PC card or linear Flash PC card can be accessed successfully (including the **dir** command) with the Catalyst and IOS operating systems but will not boot from ROMMON.

Note The 16-MB MEM-C6K-FLC16M(=) and 24-MB MEM-C6K-FLC24M(=) linear Flash PC cards are formatted for the Catalyst 6500 series supervisor engines and are ready to use.

The MEM-C6K-ATA-1-64M= and 64-MB MEM-C6K-FLC64M(=) Flash PC cards *are not* formatted. You must format these cards (see on page 7 for a description of the **format** command). When you enter the **dir disk0:** or **dir slot0:** commands, an unformatted Flash PC card returns a "bad device block info" or "invalid magic number" error message.

Note Supervisor Engine 1 and Supervisor Engine 2 do not support the same Flash PC card format. To use a Flash PC card with Supervisor Engine 2, you must format the card with Supervisor Engine 2. To use a Flash PC card with Supervisor Engine 1, you must format the card with Supervisor Engine 1.

Table 1 shows many of the commands that are available for using and managing Flash devices, including the Flash PC cards. To perform specific tasks, use these commands either alone or combined with other commands. For example, to copy a file from a TFTP server to a Flash PC card, set the BOOT environment variable so that the system will boot from this new image and then verify the boot sequence as shown in the following steps:

Note The following commands listed in are not applicable to the ATA Flash (disk0:) PC card: **undelete**, **squeeze**, **show flash devices**, **show flash**, and **verify**.

Note The ATA Flash PC card is accessed through disk0: and the 16M, 24M, and 64M Flash PC cards are accessed through slot0:. The following procedure uses slot0:.

Step 1 Copy a file from a TFTP server to the Flash PC card in slot0:

```
Console (enable) copy tftp slot0:
```

Step 2 Set the BOOT environment variable so that the system boots from slot0:

```
Console (enable) set boot system flash slot0:cat6000-sup-5-1-1-CSX.bin prepend
```

Step 3 Display the contents of the BOOT environment variable:

```
Console (enable) show boot
```

For complete descriptions of these commands and how to use them, refer to the *Catalyst 6500 Series Software Configuration Guide* and the *Catalyst 6500 Series Command Reference* publication.

Table 1 Commands for Using and Managing Flash Devices

Task	Command
Copy a Flash file to a TFTP server, another Flash device, or to the running configuration.	**copy** *m/device:filename* {**tftp** | **flash** | *m/device:filename* | **config**}
Copy a file from a TFTP server to a Flash device or to the running configuration.	**copy tftp** {**flash** | *m/device:filename* | **config**}
Copy a file from Flash memory to a TFTP server or to a Flash device, or to the running configuration.	**copy flash** {**tftp** | *m/device:filename* | **config**}
Copy the running configuration to another Flash device or to a TFTP server.	**copy config** {**flash** | *m/device:filename* | **tftp**}
Set the BOOT environment variable.	**set boot system flash** *device:*[*filename*] [**prepend**] [*mod_num*]
Format a Flash PC device.	**format** [**spare** *spare-number*] [*m/*]*device1:* [[*device2:*] [*monlib-filename*]]
Specify the boot field in the configuration register, which determines the boot method the switch will use at the next startup.	**set boot config-register boot** {**rommon** | **bootflash** | **system**} [*mod_num*]
Display the contents of the BOOT environment variable.	**show boot** [*mod_num*]
Clear a specific image from the BOOT environment variable.	**clear boot system flash** *device:*[*filename*] [*mod_num*]
Clear the entire BOOT environment variable.	**clear boot system all** [*mod_num*]
Display a list of files on a Flash device.	**dir** [[*m/*]*device:*][*filename*] [**all** | **deleted** | **long**]]
Set the default Flash device for the system.	**cd** [[*m/*][**bootflash:** | **slot0:**]]
Verify the default Flash device for the system.	**pwd** [*mod_num*]
Delete a file on a Flash device.	**delete** [[*m/*]*device:*]*filename*
Undelete a file on a Flash device.	**undelete** *index* [[*m/*]*device:*]
Permanently remove all deleted files on a Flash device.	**squeeze** [*m/*]*device:*
Identify the supported Flash devices on the system.	**show flash devices**
Display information about the Flash PC.	**show flash** [[*m/*]*device:*] [**all** | **chips** | **filesys**]
Verify the checksum of a file on a Flash device.	**verify** [[*m/*]*device:*] *filename*

Additional Documentation

Refer to the following documents for additional information on supervisor engine Flash devices:

- *Release Notes for Catalyst 6500 Series and Cisco 7600 Series Internet Router Supervisor Engine 2 ROMMON*
- *Catalyst 6500 Series Software Configuration Guide*
- *Catalyst 6500 Series Command Reference*

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco web sites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) through the online Subscription Store:

http://www.cisco.com/go/subscription

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) Website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
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To obtain customized information and service, you can self-register on Cisco.com at this URL:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://tools.cisco.com/RPF/register/register.do

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

http://www.cisco.com/en/US/support/index.html

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:

  http://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide,* and the *Internetworking Design Guide.* For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:

  http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html

- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:

  http://business.cisco.com/prod/tree.taf%3fasset_id=44699&public_view=true&kbns=1.html

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in the design, development, and operation of public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:

  http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:

  http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

This document is to be used in conjunction with the *Catalyst 6500 Series Software Configuration Guide* and the *Catalyst 6500 Series Command Reference* publications.

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